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ABSTRACT

This is one of a series of proxemic studies made in laboratory, natural, or academic settings by the researcher with the Dennis Infracommunication Analysis Device to observe, classify, record, and analyze dyadic infracommunication, including verbal and nonverbal modes. The focus was on communicative behavior of teacher and pupil, student teacher and pupil, and teacher and student teacher interaction. The researcher observed 2,633 dyads at an elementary school and recorded sex, race, status, position, locomotion, spatial distance, angle of orientation, gaze, smile, touch, and audible transmissions. Resulting empirical data showed communication patterns varied by sex, race, and status, revealing patterns of teaching behavior. (Four tables of data are included.) (Author)

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Abstract

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This is one of a series of proxemic studies made in laboratory, natural or academic settings by the researcher with the Dennis Infracommunication Analysis Device (DIAD) to observe, classify, record and analyze dyadic infra-communication, including audible and inaudible modes. The focus is on communicative behavior manifested by persons of 3 statuses, teachers, student teachers, and pupils, interacting in dyads across status within and across race and sex. The researcher observed 2633 dyads at a desegregated elementary school, recording sex, race, status, position, locomotion, interpersonal spatial distance, angle of orientation, gaze, smile, touch and audible transmissions. Resulting empirical data shows communication patterns varied by sex, race and status, revealing patterns of teaching behavior.

Paper presented at the American Education Research Association meeting in New Orleans, March 1, 1973.

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# Patterned Teaching Behavior: A Study of Dyadic Infracommunication

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## Introduction

This is one of a series of proxemic studies made by the researcher to investigate communication (verbal and non-verbal behavior) in natural, academic, and laboratory settings with the DIAD (Dennis, 1971, 1972).

Research in Teacher Education: A Symposium from the American Educational Research Association emphasizes that teaching behaviors must be researched empirically. "The problem which confronts those concerned with research on teacher education involves a quest for a more dependable knowledge of teaching behavior (Smith 1971, p. 1)." McGraw (1969) states that detailed and objective description of behavior patterns used by man is still largely tentative. This study reports objective descriptions of behavior patterns of student teachers, their supervising teachers, and the pupils of both when engaged in dyadic (two-person) interaction.

Behavior communicates (Sommer, 1969); communicative behavior, conscious and unconscious, is culturally patterned (Hall, 1959, 1966). Communication occurs in transmissions along many infracommunication channels in modes such as sight, touch, and hearing; the transmissions occurring concomitantly, intermittently or in overlapping intervals. Transmission along one infra-communication channel may contradict, modify or reinforce transmissions on other channels. The sum of infracommunication transmissions occurring at a given time make up the complete message. There is need for basic research

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SP 006 511

in the field (Birdwhistell, 1968, 1970), particularly in proxemics, the science of man's use of space (Hall, 1970). Some infracommunication measures such as gaze, interpersonal spatial distance and angle of orientation have been found to be indicants of affect, regard, liking, and degree of intimacy between dyadic partners (Argyle and Dean, 1965; Hall, 1966; Goldberg, Kiesler, and Collins, 1969).

## Problem

Since verbal and non-verbal communication behavior is so important in the teaching learning process, and teaching is dyadic (Smith, 1971), this study asked the question: What are the patterns of infracommunication evidenced in cross status dyads composed of people of three statuses, teacher, student teacher, and pupil, in and out of classrooms at an elementary school. The problem was to describe this infracommunication by observation, classification, recording and analysis.

## DIAD

The Dennis Infracommunication Analysis Device (DIAD) was developed by the author to facilitate observation, classification, recording, and analysis of infracommunication, was based on the theory and work of Hall (1970) and the communication theory and kinesics work of Birdwhistell (1968, 1970), and was structured and shaped during initial observations made of human and non-human subjects in laboratory and natural settings indoors and outdoors.

## Subjects

The Ss were 12 white student teachers (11 female and one male), their 12 supervising female teachers (11 white and one Black) and their pupils observed interacting in classrooms and outside in areas such as library,

hall, cafeteria and grounds at a desegregated elementary school. The pupil population ratio was 32% Black and 68% white, and the sex ratio for pupils was 50/50.

## Method

Observations were made during 50 hours within a two-week period, in the morning and afternoon, as Ss interacted dyadically across status within and across sex and race. Data on Ss sex, race, status, position, locomotion, gaze, interpersonal spatial distance, angle of orientation, kinesics such as smile, kinesthetics such as hug, and transmission in an audible mode apparent to the observer were collected by simple observation with the DIAD.

With random selection of class and time, the observer went where the appointed class was, sitting or standing in the least conspicuous place available and refraining from initiating verbal, tactile or eye contact with the Ss as they were observed interacting in the calssroom and outside. Subjects were not aware of the nature of observer's interest and recording. The observer first sought to extinguish effects of her presence on the subjects. After the Ss appeared to be habituated to the presence of the observer, the data collection period began. Observer reliability was over 90% on all variables.

Selection of dyads for observation was by the sequential spatial scan technique developed by the researcher for use with the DIAD. Though initial observations were made in spring of the year, data reported here was collected the following fall, on 2633 dyads. The data, in numerical DIAD coding, was processed by computer. Chi square was used as a test of

significance at the .05 level when appropriate.

## Results

Empirical data gave objective description of communication behavior. Subjects interacted dyadically in 19 combinations across status (Figure 1). Infracommunication data reveal patterns varying along dimensions of sex, race, and status (Figures 2, 3, 4, 5, and 6). Interesting findings are: The instructors interacted more frequently ($p < .05$) with male pupils ($n = 1367$) than with female pupils ($n = 947$). The teacher and student teacher interacted with black pupils ($n = 937$) more ($p < .05$) than would be expected from the ratial balance of the school population and the sample. The white female student teacher interacted with greater frequency with the white male pupil ($n = 383$), but interacted most ($p < .05$) with the Black male pupils ($n = 347$) considering the 32:68 racial ratio and 50:50 sex ratio of the pupils in the school. The white female student teacher also interacts at a more intimate interpersonal spatial distance with Black pupils ($n = 531$, $d = 1328$ mm) than with white pupils ($n = 666$, $d = 2515$ mm). The white female student teacher was closer ($n = 1197$, $d = 1997$ mm) than any other instructors interacting with pupils. Conversely the white male student teacher was most distant ($n = 83$, $d = 4368$ mm) of the instructors communicating with pupils. The Black female pupil interacted at smaller interpersonal spatial distance with the white female student teacher ($n = 184$, $d = 1250$ mm) and the white female teacher ($n = 129$, $d = 1540$ mm) than with the Black female teacher ($n = 11$, $d = 2490$ mm), or with the white male student teacher ($n = 14$, $d = 6220$ mm). Black pupils interacted at a less intimate inter-

personal spatial distance with the Black female teacher (n = 27, d = 3781 mm) than with their other female instructors, which is in accord with Baxter's (1970) finding that Black dyads interacted at greater interpersonal spatial distance than did white dyads. Black male pupils interacted at a closer mean interpersonal spatial distance with the white male student teacher (n = 11, d = 1660 mm) than did other pupils. Instructors had greater mean distance in teacher-student teacher dyads (n = 319, d = 428) than they did in instructor-pupil dyads (n = 2314, d = 2404 mm). Distances reported above are mean distance.

Thirteen percent of the dyads composed of a Black female teacher and a white female student teacher had zero distance or physical contact. Less than 3% of the white female student teacher - white female teacher dyads and the white female teacher - white male student teacher dyads were at zero distance, i.e., touching.

Data show Blacks touch more than whites. In addition, Blacks touch more across than within race in across status dyads. Initial observations in the school showed that Black pupils touch more in within status dyads than do whites (Dennis, and Powell, 1972).

Angle of orientation varies in teacher-student teacher dyads by sex and race. The white male student teacher and the white female teacher communicate most frequently at an angle of 45°, whereas other instructor dyads have a 90° modal angle of orientation.

The modal angle of orientation of most pupil-instructor dyads was at 90°. The white male student teacher had a modal angle of orientation in dyads

with white female pupils of 0 degree, or facing. The male student teacher-Black female pupils had a less intimate modal angle of orientation than the norm, at 120°. The modal angle of orientation in white male student teacher-male pupil dyads was 180° or shoulder to shoulder, which is less confrontive than interaction with female pupils.

Modal gaze of Ss in most of the dyads was at media or work of the dyadic partner. The modal gaze of the white male student teacher interacting with white female pupils and Black pupils was viewing the dyadic partner peripherally; the Black males in these dyads had a similar modal gaze. The modal gaze of white female instructors in dyads was eye to eye contact. Modal gaze of the Black female teacher was at the eyes of a white female student teacher, who viewed her peripherally, in modal measures.

Analysis and interpretation of the vast quantities of data obtained is continuing in this, the first research to examine all observable infra-communication in a teaching-learning situation; the patterns of teaching behavior.

The results are not generalized to other Ss and situations, but there is no reason why the same method and instrument could not be used effectively to research dyadic infracommunication and interpersonal relations in similar situations and in other areas. The author is doing so, and recommends this to others.

## References


Argyle, M., and Dean, J. Eye Contact, distance, and affiliation. Sociometry, 1965, 28 (3), 389-394.

Baxter, J. C. Interpersonal spacing in natural settings. Sociometry, 1970, 33 (4), 444-456.

Birdwhistell, R. L. Communication. Vol. 3. International encyclopedia of the social sciences. New York: Macmillan, 1968.

Birdwhistell, R. L. Kinesics and context. Philadelphia: University of Pennsylvania Press, 1970.

Dennis, V. C. The Dennis Infracommunication Analysis Device (DIAD). Barnesville, Georgia: 1971.

Dennis, V. C. Behavior patterns and dyadic infracommunication of teachers, student teachers and pupils. Doctoral dissertation. Ann Arbor: University Microfilms, 1972.

Dennis, V. C., and Powell, E. R. Dyadic behavior of children in a desegregated school. Paper presented at the meeting of the Animal Behavior Society in Reno, June, 1972.

Goldberg, G. N., Kiesler, C. A., and Collins, B. E., Visual behavior and face-to-face distance during interactions. Sociometry, 1969, 32 (1), 43-53.

Hall, E. T. The silent language. New York: Fawcett World Library, 1959.

Hall, E. T. The hidden dimension. Garden City: Doubleday, 1966.

Hall, E. T. A system for the notation of proxemic behavior. In Simon, A., & Boyer, E. G. (Eds.) Vol. 9. Mirrors for Behavior. Philadelphia: Research for Better Schools, Inc., 1970.

McGrew, W. C. An ethological study of agonistic behavior in preschool children. In PROCEEDINGS 2ND INT. CONGR. PRIMATE., Atlanta, Ga., 1968, Vol. 1, New York: Karger, Basel, 1969.

Smith, B. O. (Ed.) Research in teacher education: A symposium. For the American Educational Research Association. Englewood Cliffs, N.J.: Prentice-Hall, 1971.

Sommer, R. Personal space. Englewood Cliffs, N.J.: Prentice-Hall, 1969.

| | WFP | WMP | BFP | BMP | WFS | WMS |
|---|---|---|---|---|---|---|
| WFT | WFT WFP | WFT WMP | WFT BFP | WFT BMP | WFT WFS | WFT WMS |
| BFT | BFT WFP | BFT WMP | BFT BFP | BFT BMP | BFT WFS | |
| WFS | WFS WFP | WFS WMP | WFS BFP | WFS BMP | | |
| WMS | WMS WFP | WMS WMP | WMS BFP | WMS BMP | | |

WFT = a white female teacher
BFT = a black female teacher
WFS = a white female student teacher
WMS = a white male student teacher
WFP = a white female pupil
WMP = a white male pupil
BFP = a Black female pupil
BMP = a Black male pupil

Figure 1. The 19 Possible Categories of Cross Status Dyads Between Ss in the Sample Population.

| Dyadic Ss | n Dyads | % of total n | mean distance mm. | frequency zero distance |
|---|---|---|---|---|
| WFT WFS | 248 | 9.41 | 462 | 6 |
| WFT WMS | 48 | 1.82 | 326 | 1 |
| BFT WFS | 23 | .87 | 292 | 3 |
| WFS WFP | 283 | 10.75 | 178 | 98 |
| WMS WFP | 26 | .99 | 443 | 2 |
| WFT WFP | 288 | 10.94 | 264 | 85 |
| BFT WFP | 12 | 0.46 | 129 | 4 |
| WFS BFP | 184 | 6.99 | 125 | 63 |
| WMS BFP | 14 | .53 | 622 | 6 |
| WFT BFP | 129 | 4.90 | 154 | 40 |
| BFT BFP | 11 | 0.42 | 249 | 1 |
| WFS WMP | 383 | 14.55 | 306 | 104 |
| WMS WMP | 32 | 1.22 | 442 | 3 |
| WFT WMP | 335 | 12.72 | 342 | 100 |
| BFT WMP | 18 | 0.68 | 283 | 4 |
| WFS BMP | 347 | 13.18 | 136 | 171 |
| WMS BMP | 11 | 0.42 | 166 | 6 |
| WFT BMP | 225 | 8.55 | 249 | 67 |
| BFT BMP | 16 | .61 | 466 | 3 |

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Figure 2. Behavior Patterns in Dyads:
Interpersonal Spatial Distance and Zero Distance

| Dyadic Ss | n Dyads | Modal Angle of Orientation |
|---|---|---|
| WFT WFS | 248 | Ss at an angle of 90° |
| WFT WMS | 48 | Ss almost face to face, at an angle of 45° |
| BFT WFS | 23 | Ss at an angle of 90° |
| WFS WFP | 283 | Ss at an angle of 90° |
| WMS WFP | 26 | Ss facing each other |
| WFT WFP | 288 | Ss at an angle of 90° |
| BFT WFP | 12 | Ss at an angle of 90° |
| WFS BFP | 184 | Ss at an angle of 90° |
| WMS BFP | 14 | Ss at an angle of 135° |
| WFT BFP | 129 | Ss at an angle of 90° |
| BFT BFP | 11 | Ss at an angle of 90° |
| WFS WMP | 383 | Ss at an angle of 90° |
| WMS WMP | 32 | Ss side by side (180° angle) |
| WFT WMP | 335 | Ss at an angle of 90° |
| BFT WMP | 18 | Ss at an angle of 90° |
| WFS BMP | 347 | Ss at an angle of 90° |
| WMS BMP | 11 | Ss side by side (180° angle) |
| WFT BMP | 225 | Ss at an angle of 90° |
| BFT BMP | 16 | Ss facing each other |

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Figure 3. Behavior Patterns in Dyads: Interpersonal Angle of Orientation.

| Dyadic Ss | Modal Gaze | |
|---|---|---|
| | $S_1$ | $S_2$ |
| WFT WFS | eye contact/eye contact | |
| WFT WMS | at media/at media | |
| BFT WFS | eye contact/peripheral | |
| WFS WFP | at media/at media | |
| WMS WFP | peripheral/at media | |
| WFT WFP | at media/at media | |
| BFT WFP | at media/at media | |
| WFS WMP | at media/at media | |
| WMS BFP | at media/at media | |
| WFT BFP | at media/at media | |
| BFT BFP | at media/at media | |
| WFS WFP | at media/at media | |
| WMS WMP | peripheral/at media | |
| WFT WMP | at media/at media | |
| BFT WMP | at media/at media | |
| WFS BMP | at media/at media | |
| WMS BMP | peripheral/peripheral | |
| WFT BMP | at media/at media | |
| BFT BMP | at media/at media | |

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Figure 4. Behavior Patterns in Dyads: Gaze.